

12 pts each
 3 pts each
 correct x/0
 so 3x24

2. Circle ALL of the following integrals that can be solved using only antiderivatives, algebra, and substitution, and cross out the others. *(basic skills)*

(A) $\int \frac{1}{(x-2)^3} dx$
 (B) $\int \frac{1}{(x^2-2)^3} dx$
 (C) $\int \frac{1}{e^{2x+1}} dx$
 (D) $\int \frac{1}{\cos^2 x} dx$

3. Circle ALL of the following integrals that are good candidates for integration by parts, and cross out the others. *(similar to integration worksheet)*

(A) $\int e^x \sin(e^x) dx$
 (B) $\int e^x \sin x dx$
 (C) $\int \sin(e^x) dx$
 (D) $\int e^{\sin x} dx$

4. Circle ALL of the following terms that would be part of a partial fractions decomposition of $\frac{x^2-1}{(x-1)^3(x^2+3)(x^2-4)}$, and cross out the others. *(similar to 9.3 #17-46)*

(A) $\frac{A}{x^2+3}$
 (B) $\frac{Ax+B}{x^2-4}$
 (C) $\frac{A}{(x-1)^2}$
 (D) $\frac{Ax+B}{(x-1)^2}$

5. Circle ALL of the following integrals that can be solved by rewriting with trigonometric identities and then performing a substitution, and cross out the others. *(similar to 9.4 #21-66)*

(A) $\int \cot^4 x \csc^3 x dx$
 (C) $\int \tan^4 x \sec^2 x dx$
 (B) $\int \sec^3 x \cos^4 x dx$
 (D) $\int \sin^2 x \cos^4 x dx$

6. Circle ALL of the following improper integrals that would need to be split into two or more integrals before solving with limits, and cross out the others. *(similar to 9.6 #21-58)*

(A) $\int_1^\infty \frac{\ln x}{x} dx$
 (B) $\int_0^\infty \frac{x}{x^2+1} dx$
 (C) $\int_{-\infty}^\infty \frac{1}{x^2+1} dx$
 (D) $\int_1^\infty \frac{e^x}{1-e^x} dx$

NO

7. Circle ALL of the following improper integrals that diverge by comparison with $\frac{1}{x}$, and cross out the others. *(similar to 9.6 #59-66)*

(A) $\int_0^1 \frac{1}{\sqrt{x}} dx$
 (B) $\int_1^\infty \frac{1}{\sqrt{x}} dx$
 (C) $\int_0^1 \frac{1}{x^4} dx$
 (D) $\int_1^\infty \frac{1}{x^4} dx$